

be a relic structure homologous to that of the primitive doridaceans and the pleurobranchids, in which, as stated by LACAZE-DUTHIERS (1859), EVANS (1914), and MARCUS & MARCUS (1962), the circular sinus collects the blood returning from the skin to the auricle.

At the same time in evolution as the lateral sinuses are differentiated, the organization of the typical dorsal and perianal corolla of gills is produced and the heart is modified.

The gills of Doridacea have been considered as a primary gill or ctenidium (that is, homologous to those of the shelled forms) according to their innervation, the position of the gills relative to the anus and renal orifice, embryological development, and the occurrence of a raphe (EVANS, 1914; MINICHEV, 1970; TARDY, 1970; JONAS, 1985). As such the gill of the Doridacea originates directly from that of the Notaspidea, which is placed asymmetrically on the right side. This asymmetry is present in the primitive doridaceans (Bathydorididae). In more advanced dorids the gills are situated dorsally in the midline on the notum. The heart shows similar changes, as it changes from an asymmetrical to a central position in the Doridacea. Further, two kinds of entrance of blood into the auricle are differentiated: posteriorly the blood flows from the gills and laterally it passes from the lateral sinuses.

As is illustrated in Figure 11A, *Bathydoris obliquata* has the heart placed asymmetrically on the right side and has only a common entrance of blood from the gills and circular sinus to the auricle. MINICHEV (1970) states that in *B. vitjazi* an intermediate situation exists in which the right part of the circular sinus opens independently into the auricle (see Figure 11B). Finally, the gills and heart of higher doridaceans are situated in the midline and the two afferent systems of the auricle are well differentiated.

In Corambidae the organization of the gills and the heart is different from that of the rest of Doridacea. In this family the gills are located posteriorly between the notum and foot and the auricle has two lateral posterior entrances of blood from the gills and two lateral anterior ones from the lateral sinuses (Figure 11C).

The differences between the branchial and circulatory systems in doridacean species, with dorsal gills (i.e., *Platydoris argo*), and species of Phyllidiidae, in which the gills are located along both sides between the notum and the foot, were shown by WÄGELE (1984). Wägele noted that the gills of Phyllidiidae are not homologous to the ctenidium but rather are secondary gills; furthermore, the caudomedial entrance of blood into the auricle is not present, so that in *Phyllidia pulitzeri* Pruvot-Fol, 1962, the lateral sinuses return the blood to the auricle from the sites of cutaneous respiration and from the gills. Some of the gill-less doridaceans (i.e., *Doridoideides gardineri* Eliot & Evans, 1908) do not have the caudomedial entrance either (see Figure 11E).

It is necessary to compare the gills of the Corambidae and Phyllidiidae to determine whether they are homologous with each other and to demonstrate whether the or-

ganization of the gills of Corambidae constitutes an intermediate situation between the typical organization of Doridacea and phyllidiids.

According to BABA (1937), in *Okadaia elegans* Baba, 1931, one cannot easily determine which of the two chambers is the ventricle and which is the auricle, because the heart is not connected to any blood vessel and both chambers are thin walled. Furthermore, the heart is not enclosed within a pericardium. BABA (1937) states that the function of this peculiar heart could be the maintenance in the hemocoel of a current blood that is oxygenated by cutaneous respiration. POTTS (1983) suggests that in smaller dorids the dorsal notum appears to be the main site of gaseous exchange, whereas in large animals the gills provide the main respiratory structure. On the other hand, ELIOT & EVANS (1908) noticed that in doridaceans in which respiration occurs over the entire external surface, as opposed to in a special organ, a strong heart and an extended arterial system are not necessary. These data could explain the organization in *Okadaia elegans*, because it is a small (less than 5 mm in length) gill-less dorid with only cutaneous respiration. A similar situation was noted by GRAHAM (1982) about the prosobranch *Cima minima* (Jeffreys, 1858); because of its small size (less than 1.5 mm), the surface area to volume ratio is so large that neither gill nor heart is necessary.

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The Malacological Contributions of Ida Shepard Oldroyd and Tom Shaw Oldroyd

by

EUGENE V. COAN AND MICHAEL G. KELLOGG

Department of Invertebrate Zoology, California Academy of Sciences,
Golden Gate Park, San Francisco, California 94118, USA

Abstract. Tom Shaw Oldroyd (1853-1932) and Ida Shepard Oldroyd (1856-1940) amassed a large private collection of mollusks. During their lifetimes, this material was incorporated into the Stanford University collections, which eventually became part of the holdings of the California Academy of Sciences. Altogether, the Oldroyds proposed 59 new species-group names, as follows: 10 for bivalves, including 3 *nomina nuda*, the rest now regarded as synonyms; 47 for gastropods, including 2 *nomina nuda*, 23 synonyms, 4 valid, and 18 of uncertain status, mostly pyramidellids; one that is a probable synonym in the Annelida; and one for a stony coral. Type material has been located and documented for all but one of the nomenclaturally available taxa.

Tom Shaw Oldroyd was born in Huddersfield, England, 13 June 1853, and two years later his family moved to Flushing, New York. He moved to California in 1880, living first in Los Angeles, then in Long Beach, earning a living as a handyman. Here he began collecting shells (ANON., 1932, 1933)¹.

Ida Shepard was born in Goshen, Indiana, 25 November 1856. After attending high school in Saline, Michigan, she received a teaching certificate from the University of Michigan. In 1888, her family moved to Long Beach, where she too began making a shell collection (CHACE, 1940; ANON., 1942).

In September 1895, the two shell collections were merged when their owners married and moved into a house on Signal Hill in Long Beach. At the time of their marriage, William H. Dall wrote them:

"Speaking from experience I may compare married folks to the two valves of a clam, different, yet, in a sense, equal; necessary to each other for completeness; liable to nip anybody who comes between them; showing to the outside world what ever of strength and beauty they possess, yet sheltering from observation all that is most precious, tender and necessary to life, between

them. Quiet contentment is proverbial of clams and not to be despised by human beings; they are also said to be happy at high water, which I hope will never fail you. They enclose and foster the 'pearl of great price,' referred to in scripture, and emblematic of all that is lovely in the marriage relation. Let us not forget their example. May care and sorrow follow you at a snail's pace and never catch up with you. May good fortune stick to you like an abalone to a rock, and your friends be as numerous as *Littorinas*."²

With his skills in carpentry, Tom Oldroyd made cabinets for their collection (KEEN, 1983:11), and together they collected extensively in southern California. While they did little dredging themselves, Tom Oldroyd was very successful in encouraging San Pedro fishermen to bring in shells caught in their nets. As a result, the Oldroyds accumulated extensive suites of many rare taxa, such as *Trophon catalinensis*, which no one else had. Ida Oldroyd became an early and active member of the Conchological Club of Southern California, founded in 1902.

In 1914, Ida Oldroyd went to Oakland, California, to pack a portion of the collection of the late Henry Hemphill for its transfer to the California Academy of Sciences (ANON., 1914; background: COAN & ROTH, 1987). Two years later, some alumni of the Geology Department of Stanford University, through the efforts of the paleontolo-

¹ His name was Tom, not Thomas, as it has been given by some authors. In every paper he published and on his gravestone, it is Tom. In biographical articles after his death, it is said that he was born in "Huddisfield," England. However, we can find no such place name and suspect that this is an error for Huddersfield.

² From a copy in the CAS Archives.

gist Ralph Arnold, purchased the remainder of the Hemphill collection. According to KEEN (1983:12–13):

“None of these alumni had any idea how to lay it out or what to do with it, so someone suggested that the department hire Mrs. Oldroyd to come and unpack, and put the material into cabinets. So she started doing it [in 1916], and immediately saw that part of it, at least, needed reidentification, and so she wanted her own collection to use for comparative purposes. Her collection had been sent, a piece at a time, to the U.S. National Museum so she felt that the labels were authentic, and she could compare Hemphill’s things with hers and get the proper reidentification. So, the department consented that she could bring her collection up, which she did. She put it out in cabinets on one side of the room and unpacked the Hemphill material on the other side. Then, after she got the Hemphill stuff all out, she called the department in and said, ‘Now, look, why don’t you just want to buy my collection and have it as [a] supplement, and then you will have the best collection on the coast?’ So they talked it over and decided to do that [in 1917]. But they didn’t have money enough to buy it outright; the Oldroyds wanted several thousand dollars for it. So the department then offered to hire the Oldroyds on an annual basis, paying them what was . . . called an annuity, but it was actually . . . installments on the collection. So, she was to be curator until the \$8,000 amount was paid off. But by the time she got installed, that arrangement was largely forgotten, and she always felt she had an annuity for life, and nobody disputed her, so she stayed on until she was about 84, [when] she died.”

While at Stanford, the Oldroyds also kept up their extensive collecting, with dredging expeditions—near Friday Harbor, Puget Sound, during the summers of 1917 (T. OLDROYD, 1918a) and 1918 (I. OLDROYD, 1919), and near Nanaimo, British Columbia, in May 1919 (I. OLDROYD, 1920:135) and in July and August 1934 (I. OLDROYD, 1935a:14; 1935b). In 1922, Ida Oldroyd was hired by the American Museum of Natural History as a consultant in conchology. She spent several months there evaluating and arranging the collection, and she provided many West Coast shells, including some type specimens, by later exchange.

In 1929–1930, the two traveled around the world (Figures 2, 3). On their return, they engaged in extensive overseas exchanges and acquired several entire collections for the university.

Ida Oldroyd was a charter member of the American Malacological Union. At its first meeting in 1931, she gave a paper entitled “Shells that have strayed far from home” (ANON., 1931:2). At the 1933 meeting, she presented “Notes on some of the West Coast Veneridae” (ROBERTSON, 1933:38). The 1934 AMU meeting was held at Stanford University, and Mrs. Oldroyd gave the welcoming address on

“The history of the Stanford collection” as well as a paper titled “The uses and abuses of shells.” She was there elected Honorary President, a post she retained until her death. She evidently attended all of the AMU meetings, except that held in 1932, and she presented papers at most of them (I. OLDROYD, 1935b, 1936, 1938). Oddly, although she is not listed among the attendees at the meeting in Havana in 1938 (AMU *Bulletin* for 1938:[15]), CHACE (1940) told the story of how, having missed the boat to Cuba, she flew there from Florida and arrived before the rest of the AMU members.

Tom Oldroyd died 3 November 1932 (ANON., 1932). His particular contribution was the study of Pleistocene fossils. He was especially interested in minute shells, and his paper on the Pleistocene fossils from the Nob Hill Cut in San Pedro (T. OLDROYD, 1925) has lengthy descriptions of many pyramidelids proposed as new taxa.

Myra Keen, having received her PhD at the University of California in Berkeley in 1934, returned to join her parents in Palo Alto. There being few jobs in her chosen field of psychology, she became a volunteer assistant to Mrs. Oldroyd, with the task of identifying and curating land snails. However, Mrs. Oldroyd had very set ideas about how things should be done, and the two did not get along. After about four months, Keen took the opportunity to become a research assistant to the paleontologist Hubert G. Schenck (KEEN, 1983; ROBERTSON, 1986).

Ida Oldroyd died on 9 July 1940 (ANON., 1942). She was particularly noted for her books on the mollusks of Puget Sound (I. OLDROYD, 1924b) and on those of the entire northeastern Pacific (I. OLDROYD, 1925, 1927). Both works are essentially non-critical compilations of original descriptions, but with many new illustrations.

The Stanford University collections were transferred to the California Academy of Sciences on 9 March 1977 (SMITH, 1978).

LIST OF TAXA

The following list includes the taxa that the Oldroyds introduced. Each original combination is followed by the original reference (keyed to the Literature Cited). This is followed by the type locality (with added data in brackets), information about type material (number of specimens in parentheses), and any remarks about current allocation. The Literature Cited provides references for the Oldroyds’ taxa, any senior homonyms of these taxa, and sources of information about their current allocation, but not for senior synonyms of the taxa; references for papers on mollusks not containing new taxa are also included. Three *nomina nuda* are allocated to the synonymy of other species based on material labeled by Ida Oldroyd in the California Academy of Sciences.

The pages numbered in I. OLDROYD (1927) are those of the entire set of three volumes (1–941), rather than the separate page numbers also present in volumes 2 and 3.

The Oldroyds can be assumed to be the collectors unless



1



2



3



4

otherwise indicated. Prior collection numbers, such as those of the Stanford University Paleontology Type Collection (SMITH, 1978), are not given here. We have relied upon published type catalogues for the holdings of the Los Angeles County Museum of Natural History (SPHON, 1971, 1973; WILSON & BING, 1970; WILSON & KENNEDY, 1967), the San Diego Natural History Museum (WILSON, 1966), and the University of Colorado Museum (WU & BRANDAUER, 1982).

The following abbreviations are used for institutions in the list.

AMNH—American Museum of Natural History, New York

CAS—California Academy of Sciences, San Francisco

LACM—Los Angeles County Museum of Natural History

LACMIP—LACM, Department of Invertebrate Paleontology

SBMNH—Santa Barbara Museum of Natural History

SDNHM—San Diego Natural History Museum

UCM—University of Colorado Museum, Boulder

UCMP—University of California, Museum of Paleontology, Berkeley

UCR—University of California, Riverside

USNM—United States National Museum of Natural History, Washington, D.C.

Cnidaria

oldroydi, *Dendrophylla*—I. OLDROYD, 1925:pl. 49, fig. 7, ex Faustino MS. See also FAUSTINO, 1931:286–287, 289; pl. 1, fig. 2.

[Submarine canyon] off San Pedro, Los Angeles Co., Calif.; 366 m.

Type material: CAS 036397, holotype, 8 pieces of colony; UCMP 12200, "paratype."

Remarks: *Dendrophylla oldroydi* I. Oldroyd, 1925; *D. oldroydi* Faustino, 1931, is an objective synonym and a junior primary homonym. See DURHAM (1947:38, 57; pl. 10, figs. 1, 9).

Annelida

nodosus, *Vermetus*—T. OLDROYD, 1921a:116, 119; pl. 5, fig. 10.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene³.

Type material: CAS 61823.03, holotype.

Remarks: Described as a vermetid gastropod, Keen (*in* SMITH, 1978:352) concluded that it was a burrow lining of a teridinid bivalve. R. D. Turner (letter, 30 May 1989) disagreed, as do we. It seems instead to be the tube of a serpulid worm, perhaps *Protula superba* Moore, 1909 (based on examination of preserved material in the CAS). However, its allocation merits additional investigation.

Mollusca

Bivalvia

austini, *Leda*—I. OLDROYD, 1935a:13–14; fig. 2.

Off Neck Point, W coast of Vancouver Id., British Columbia; 183 m.

Type material: CAS 060973, holotype, right valve; CAS 060974, paratype. Holotype evidently not deposited at Pacific Biological Station as indicated by I. Oldroyd (F. R. Bernard, letter, 7 April 1987).

Remarks: Synonym of *Nuculana* (*Thestylea*) *spargana* Dall, 1916, according to BERNARD (1983:13).

clemensae, *Pecten*—I. OLDROYD, 1938:[2] [*nomen nudum*].

Remarks: Synonym of *Chlamys* (*Chlamys*) *rubida* (Hinds, 1845), based on material labeled by I. Oldroyd in the CAS.

clemensi, *Pecten hindsii*—I. OLDROYD, 1935b:[3] [*nomen nudum*].

Remarks: Synonym of *Chlamys* (*Chlamys*) *rubida* (Hinds, 1845), based on material labeled by I. Oldroyd in the CAS.

gardneri, *Yoldia*—I. OLDROYD, 1935a:14; fig. 1.

"Gardner" [Garden] Bay, Pender Harbor, Vancouver Island, British Columbia; 7 m.

³ This locality is U.S. Geological Survey location 10419. The terminology for this formation and its age have been brought into conformity with modern usage.

Explanation of Figures 1 to 4

Figure 1. Tom and Ida Oldroyd, about 1900.

Figure 2. Ida and Tom Oldroyd aboard the *Empress of Australia*, 1929.

Figure 3. Ida and Tom Oldroyd, Elephant Park, Colombo, Sri Lanka, 1930.

Figure 4. Tom and Ida Oldroyd at a beach shanty in Long Beach, California, about 1900. The person in the middle is unidentified.

Type material: CAS 060975, holotype, pair; CAS 060976 (1), 064888 (2), paratypes. Holotype evidently not deposited at Pacific Biological Station as indicated by I. Oldroyd (F. R. Bernard, letter, 7 April 1987).

Remarks: Synonym of *Yoldia* (*Yoldia*) *amygdalea* (Valenciennes, 1846), according to BERNARD (1983:13).

kincaidi, *Pecten*—I. OLDROYD, 1920:135–136; pl. 4, figs. 3, 4. See also I. OLDROYD, 1924b:17; pl. 9, figs. 3, 4; 1925:53–54; pl. 12, figs. 1, 2, both as *Pecten hindsii kincaidi*.

[Puget Sound, Washington; 46 m (label)]; July 1919 (holotype); July 1918 (paratype).

Type material: CAS 064277, holotype; the paratype cannot be located in the Thomas Burke Memorial Washington State Museum at the University of Washington (E. Marshall, letter, 30 September 1989).

Remarks: Synonym of *Chlamys* (*Chlamys*) *rubida* (Hinds, 1845), according to BERNARD (1983:25).

lomitensis, *Crassatellites*—I. OLDROYD, 1924a:10; pl. C.

Lomita, Los Angeles Co., Calif.; Lomita Marl; middle Pleistocene; S. M. Purple.

Type material: UCR 6621/1, holotype, a left valve. Not deposited in LACMIP, as indicated. Oldroyd implied that the type specimen included both valves but illustrated only the left valve, and a right valve was not located by MOUNT (1974).

Remarks: Synonym of *Eucrassatella fluctuata* (Carpenter, 1864), according to COAN (1984:158).

meridionalis, *Chione*—I. OLDROYD, 1921:93; pl. 4, figs. 3, 4.

[Sechura Bay (label)] Peru.

Type material: UCMP 31206, UCMP Loc. 3135, holotype, pair; CAS 064399, paratype.

Remarks: Synonym of *Chione* (*Chione*) *compta* (Broderip, 1835), according to BERNARD (1983:51).

nana, *Cuspidaria* (*Tropidomya*)—I. OLDROYD, 1918b:28. See also I. OLDROYD, 1925:99; pl. 13, figs. 8, 9.

Monterey Bay, Monterey Co., Calif.; clay; 2 specimens. Also, Bolinas, Marin Co., Calif.; H. Hemphill; 1 specimen.

Type material: CAS 060981, holotype, pair, from Monterey Bay; AMNH 58306, paratype, pair, from Monterey Bay.

Remarks: Synonym of *Sphenia luticola* (Valenciennes, 1846), according to BERNARD (1983:58).

newcombi, *Pecten*—I. OLDROYD, 1938:[2] [*nomen nudum*].

Remarks: Synonym of *Chlamys* (*Chlamys*) *hastata* (Sowerby, 1843), based on material labeled by I. Oldroyd in the CAS.

pugetensis, *Pecten islandica*—I. OLDROYD, 1920:136; pl. 4, figs. 5, 6. See also I. OLDROYD, 1924b:18, 209; pl. 9, figs. 5, 6; 1925:55; pl. 12, figs. 4, 5.

San Juan Islands, San Juan Co., Puget Sound, Washington; 12 specimens (2 dredged, 10 on shore); [1920 (label in SBMNH)].

Type material: CAS 064278, holotype, pair; CAS 066375, paratypes (6), from rocks on shore opposite Turn Id. (label); SBMNH 34893, paratype, pair; AMNH 30549, paratype, pair.

Remarks: Synonym of *Chlamys* (*Chlamys*) *hastata* (Sowerby, 1843), according to BERNARD (1983:24).

Gastropoda

amava, *Odostomia* (*Ivara*)—T. OLDROYD, 1925:14, 29, 38; pl. 1, fig. 7.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 1 specimen.

Type material: USNM 352514, holotype.

angelena, *Olivella biplicata*—T. OLDROYD, 1918b:34–35. See also T. OLDROYD, 1921:119; pl. 5, fig. 6; I. OLDROYD, 1927:161; pl. 26, figs. 17, 17a, both as *O. b. "angelina."*

San Pedro, Los Angeles Co., Calif.; living as well as in "upper" [Palos Verdes Sand; late Pleistocene] and "lower" [San Pedro Sand; middle Pleistocene] San Pedro Formation.

Type material: CAS 064312, holotype; CAS 064313 (1), 065621 (12), SBMNH 34839 (1), paratypes, from the Recent fauna. CAS 66181.01 (13), paratypes, from the upper Pleistocene at Santa Monica, Los Angeles Co., Calif. CAS 66182.01 (22), paratypes, from the upper Pleistocene at Signal Hill, Long Beach, Los Angeles Co., Calif.

Remarks: Synonym of *Olivella biplicata* (Sowerby, 1825), according to BURCH & BURCH (1959:20).

angelica, *Acanthina*—I. OLDROYD, 1918a:26–27.

Bahía Redondo, Isla Angel de la Guarda, Baja Calif. [Norte]; L. C. Decius & A. D. Fyfe, November 1917.

Type material: CAS 064396, holotype.

Remarks: *Acanthina angelica* I. Oldroyd, according to KEEN (1971:551, 552; fig. 1082), who illustrated the holotype and what was said to be a paratype. The latter has not been located.

buttoni, *Cypraea undata*—I. OLDROYD, 1916:107–108.

Fiji Islands; [collector unknown].

Type material: CAS 064143, holotype; AMNH 44439, paratype.

Remarks: Unnecessarily renamed *Palmadusta diluculum virginialis* SCHILDER & SCHILDER (1938:160). Synonym of *Cypraea diluculum* Reeve, 1845, according to BURGESS (1985:129).

californicum, *Sinum*—I. OLDROYD, 1917:13. See also I. OLDROYD, 1927:732–733; pl. 92, figs. 13, 14.

San Pedro, Los Angeles Co., Calif.; 10 specimens.

Type material: CAS 064357, holotype; CAS 067160 (1), 067161 (5), paratypes.

Remarks: Synonym of *Sinum scopulosum* (Conrad, 1849), according to MARINCOVICH (1977:350).

catalinensis, *Trophon*—I. OLDROYD, 1927:327; pl. 34, figs. 1, 2.

Off San Pedro, Los Angeles Co., Calif.; 46 m.

Type material: CAS 063306, holotype; CAS 036367 (7), 063307 (1), 063308 (1), 063309 (1), 065618 (17), SBMNH 34837 (2), paratypes; CAS 065617 (2), 065619 (1), 065620 (3), probable paratypes.

Remarks: *Trophon* (*Austrotrophon*) *cerrosensis catalinensis* I. Oldroyd, according to ABBOTT (1974:191). The Oldroyds distributed many lots of this species at the turn of the century under other names, long before it was named by I. Oldroyd; these specimens are not regarded as being types.

civitella, *Odostomia* (*Evalea*)—T. OLDROYD, 1925:15, 32–33, 38; pl. 1, fig. 7.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 16 specimens.

Type material: USNM 352523, holotype; USNM 352524 (5), CAS 61823.04 (4), paratypes.

clarki, *Epitonium*—T. OLDROYD, 1921a:115, 119; pl. 5, fig. 13.

[Potrero Canyon], Santa Monica [Los Angeles], Los Angeles Co., Calif.; late Pleistocene; F. C. Clark⁴.

Type material: CAS 66041.02, holotype; CAS 66041.01 (2), 66042.01 (2), paratypes.

Remarks: Synonym of *Asperiscala minutica* (DeBoury, 1912), according to DUSHANE (1979:103).

collisella, *Turbonilla* (*Pyrgolampros*)—T. OLDROYD, 1925:14 [as “*collisellae*”; first revision herein]; 25–26, 38; pl. 1, fig. 11.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 29 specimens.

Type material: USNM 333507, holotype; USNM 352507 (1), CAS 61823.05 (10), LACMIP 2157–2158 (2), paratypes.

continuum, *Epitonium*—T. OLDROYD, 1925:13, 35, 39; pl. 2, fig. 10.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; “2 specimens” (p. 13), “1 specimen” (p. 35), the latter probably correct.

Type material: USNM 352383, holotype.

Remarks: Synonym of *Nitidiscala tineta* (Carpenter, 1865), according to DUSHANE (1979:117).

diegensis, *Clathrodrillia*—T. OLDROYD, 1921a:115–116, 119; pl. 5, fig. 12.

Pacific Beach, San Diego Co., Calif.; “upper Pleistocene” [?San Diego Formation; late Pliocene]; H. Hemphill; 4 specimens.

Type material: UCMP 31207, holotype; CAS 66042.01 (3), paratypes.

Remarks: Synonym of *Moniliopsis graciosa mercedensis* (Martin, 1914), according to GRANT & GALE (1931:569). Genus originally misspelled “*Clathrodrilla*.”

diegensis, *Olivella boetica*—T. OLDROYD, 1921b:118, 119; pl. 5, fig. 2. See also I. OLDROYD, 1927:163; pl. 26, figs. 18, 18a.

[San Diego, San Diego Co., Calif. (labels)]. Also upper San Pedro [Palos Verdes Sand]; late Pleistocene.

Type material: CAS 064353, holotype; CAS 067156 (23), 067157 (77), SBMNH 34841 (1), paratypes, from the Recent fauna. CAS 66181.01 (many), paratypes, from the upper Pleistocene at Santa Monica, Los Angeles Co.; CAS 66183.01 (100), paratypes, from the upper Pleistocene at San Pedro, Los Angeles Co., Calif.

Remarks: Synonym of *Olivella baetica* Carpenter, 1864, according to BURCH & BURCH (1959:9).

epiphanea, *Turbonilla* (*Mormula*)—T. OLDROYD, 1925:14 [as “*epiphania*”; first revision herein]; 28–29, 38; pl. 1, fig. 12.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 30 specimens.

Type material: USNM 333510, holotype?; USNM 352510 (5), CAS 61823.06 (3), LACMIP 2169 (1), paratypes.

fitella, *Odostomia* (*Evalea*)—T. OLDROYD, 1925:15, 33, 38; pl. 1, fig. 8.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene.

Type material: USNM 352525, holotype; USNM 352526 (2), CAS 61823.07 (2), paratypes.

fossilis, *Conus californicus*—T. OLDROYD, 1921a:116, 119; pl. 5, fig. 9.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene: “not rare” (T. OLDROYD, 1925:10). Also in “upper San Pedro beds” [Palos Verdes Sand; late Pleistocene].

Type material: CAS 61823.08, holotype; CAS 61823.23 (3), 61823.24 (6), USNM 35352 (5), SDNHM 361–362 (2), paratypes, from Nob Hill Cut. CAS 66182.04 (5), paratypes, from the upper Pleistocene at Signal Hill, Long Beach, Los Angeles Co., Calif.

⁴ For information on this locality, see VALENTINE (1956).

Remarks: Synonym of *Conus californicus* Hinds, 1844, according to GRANT & GALE (1931:472–473).

fraseri, *Tritonalia*—I. OLDROYD, 1920:135; pl. 4, figs. 1, 2. See also I. OLDROYD, 1924b:101, 209; pl. 9, figs. 1, 2; 1927:323–324; pl. 30, figs. 11, 11a.

Brandon Island, Departure Bay, Vancouver Island, British Columbia; May 1919.

Type material: CAS 064275, holotype; CAS 064276 (2), 064837 (14), 066374 (7), USNM 338431 (5), SBMNH 34836 (1), SDNHM 1636 (1), UCM 21492 (5), paratypes.

Remarks: Synonym of *Ocenebra interfossa* (Carpenter, 1864), according to RADWIN & D'ATTILIO (1976:122–123).

fucana, *Olivella biplicata*—T. OLDROYD, 1921b:118, 119; pl. 5, fig. 4. See also I. OLDROYD, 1924b:88, 213; pl. 22, fig. 2; 1927:161; pl. 26, figs. 23, 23a.

Near Cape Flattery, Straits of Juan de Fuca, Washington. Also “Pliocene at San Pedro” [Timms Point Silt; middle Pleistocene].

Type material: CAS 064355, holotype; CAS 067153, paratypes (3), all from the Recent fauna.

Remarks: Synonym of *Olivella biplicata* (Sowerby, 1825), according to BURCH & BURCH (1959:19–20).

gomphina, *Odostomia* (*Chrysallida*)—T. OLDROYD, 1925:14, 29–30, 38; pl. 1, fig. 3.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 2 specimens.

Type material: USNM 352515, holotype; CAS 61823.09, paratype.

hemphilli, *Tegula*—T. OLDROYD, 1921a:115, 119; pl. 5, figs. 11, 11a.

“Upper Pleistocene” [?Pliocene; San Diego Formation (G. L. Kennedy, verbal communication, 25 October 1989)]; Pacific Beach, San Diego Co., Calif.; H. Hemphill; 5 specimens.

Type material: UCMP 31208, holotype; UCMP 14975 (1), CAS 66042.02 (3), paratypes.

Remarks: A valid, extinct Pliocene and Pleistocene species of *Tegula* (*Agathistoma*), according to KENNEDY (1973:123–124; figs. 3a,b) and J. H. McLean (letter, 3 May 1989).

himerta, *Turbonilla* (*Pyrgiscus*)—T. OLDROYD, 1925:14, 27–28, 38; pl. 1, fig. 1.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 5 specimens.

Type material: USNM 333508, holotype; USNM 352509 (1), CAS 61823.10 (2), paratypes.

hybrida, *Acmaea pelta* var.—I. SHEPARD [OLDROYD], 1895:72 [*nomen nudum*].

Remarks: BURCH (1946:11) quoted a description of

this variety, supposedly from OLDROYD's (1895) paper, but no description is present there. Where this quotation came from is a mystery; perhaps he was quoting the contents of a letter and misunderstood the writer's description to be that of Oldroyd. In any event, the taxon seems to have first been made available by Burch, but potential type material cannot now be found in the portion of the Burch collection in the possession of Tom and Beatrice Burch (B. L. Burch, letter, 26 July 1989). KEEP (1910:331) credited this name to Hemphill, but it is a *nomen nudum* everywhere it has appeared other than in BURCH (1946). Burch's taxon is a synonym of *Lottia pelta* (Rathke, 1833).

idae, *Turbonilla* (*Pyrgolampros*)—T. OLDROYD, 1925:14, 26–27, 38; pl. 1, fig. 9.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 190 specimens.

Type material: USNM 333509, holotype; USNM 352508 (38), 352533 (1), CAS 61823.01 (20), 61823.02 (101), 61823.26 (many), LACMIP 2159–2168 (10), paratypes. The contents of USNM 352508 and 352533 are opposite in terms of number of specimens from those given in T. Oldroyd's paper.

indisputabilis, *Alectrion cooperi* var.—T. OLDROYD, 1925:12 [*nomen nudum*; credited to “I.S. Oldroyd, 1921”].

indisputabilis, *Alectrion mendicus*—I. OLDROYD, 1927:pl. 26, fig. 4 [not in text].

[San Diego, San Diego Co., Calif.; H. Hemphill (label)].

Type material: CAS 064356, holotype.

Remarks: Synonym of *Nassarius mendicus* (Gould, 1851), according to GRANT & GALE (1931:674).

ithea, *Odostomia* (*Evalea*)—T. OLDROYD, 1925:14, 31–32, 38; pl. 1, fig. 2.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 2 specimens.

Type material: USNM 352520, holotype; CAS 61823.11, paratype.

magna, *Lirularia*—T. OLDROYD, 1925:20 [as *Margarites* (*Lirularia*) *magna*]; 36, 38; pl. 3, figs. 2, 3, 5.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; “most plentiful.”

Type material: USNM 352534, holotype (and 1 paratype evidently added later); USNM 352410 (many), CAS 1198.02 (many), 61823.12 (64), 61823.27 (many), 61823.28 (45), 61823.29 (many), LACMIP 2460–2468 (9), SBMNH 34843 (163), paratypes.

Remarks: Synonym of *Lirularia optabilis* (Carpenter, 1864), an extinct Pleistocene species, according to J. H. McLean (verbal communication, 18 February 1989). The number of specimens in the USNM lots differs from those stated in the original publication.

major, *Alia tuberosa*—T. OLDROYD, 1925:12 [as *Columbella* (*Alia*) *tuberosa major*]; 24, 39; pl. 2, fig. 11.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; "plentiful."

Type material: USNM 352369, 13 specimens in one vial and 50 in another, including one isolated that is possibly the holotype (the rest are paratypes); CAS 1198.04 (1), 61823.30 (122), 61823.31 (many), 61823.32 (44), SBMNH 34842 (5), paratypes.

Remarks: Synonym of *Mitrella tuberosa* (Carpenter, 1864), according to GRANT & GALE (1931:697).

manca, *Odostomia* (*Evalea*)—T. OLDROYD, 1925:15, 32, 38; pl. 1, fig. 5.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 60 specimens.

Type material: USNM 352521, holotype; USNM 352522 (10), CAS 61823.13 (15), LACMIP 2170–2172 (3), paratypes.

menzola, *Odostomia* (*Amaura*)—T. OLDROYD, 1925:15, 33–34, 39; pl. 2, fig. 6.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 16 specimens.

Type material: USNM 352527, holotype; USNM 352528 (5), CAS 61823.14 (4), LACMIP 2173 (1), paratypes.

mexicana, *Olivella boetica*—T. OLDROYD, 1921b:118, 119; pl. 5, fig. 3. See also I. OLDROYD, 1927:163; pl. 26, figs. 21, 21a.

Laguna Scammon, Baja Calif. Sur; H. Hemphill. Also living at San Pedro and "upper San Pedro" [Palos Verdes Sand; late Pleistocene].

Type material: CAS 064354, holotype, from Laguna Scammon. CAS 66181.03 (15), paratypes, from upper Pleistocene at Santa Monica, Los Angeles Co., Calif. CAS 66182.02 (43), paratypes from upper Pleistocene at Signal Hill, Long Beach, Los Angeles Co., Calif. CAS 66183.02 (160), paratypes, from Upper Pleistocene at San Pedro, Los Angeles Co., Calif.

Remarks: Synonym of *Olivella baetica* (Carpenter, 1864), according to BURCH & BURCH (1959:9).

minuta, *Anachis*—T. OLDROYD, 1921a:114–115 [*non Columbella* (*Anachis*) *minuta* GOULD, 1860:334].

[Potrero Canyon], Santa Monica [Los Angeles], Los Angeles Co., Calif.; late Pleistocene; F. C. Clark⁴.

Type material: Missing.

Remarks: Possibly a synonym of *Steironepion tinctoria* (Carpenter, 1864). GRANT & GALE (1931:686–687, 940; pl. 26, figs. 31, 34) made it a synonym of *Pleurotoma lineolata* Reeve, 1846, and KEEN (1971:595–597; fig. 1252) made "*P. lineolata* Reeve," *auctt.*, a synonym of Carpenter's species.

mitchelli, *Acmaea striata*—I. OLDROYD, 1933:205, 207; pl. 1, figs. 1–4.

Southern Luzon, Philippine Islands; S. A. Mitchell.

Type material: Holotype formerly in Philippine Bureau of Science 16369, but lost during World War II (J. J. Cabrera, letter, 6 June 1989); CAS 064128 (13), paratypes.

Remarks: Synonym of *Patelloida striata* Quoy & Gaimard, 1834, according to D. R. Lindberg (verbal communication, 8 February 1989).

mitchelli, *Nerita*—I. OLDROYD, 1933:205–207; pl. 1, figs. 5–7.

Philippine Islands; S. A. Mitchell.

Type material: Holotype formerly in Philippine Bureau of Science 16368, but lost during World War II (J. J. Cabrera, letter, 6 June 1989); CAS 064127 (8), 067158 (18), SDNHM 1637–1639 (3), paratypes.

Remarks: Synonym of *Nerita helicinoidea* Reeve, 1855.

montereyensis, *Astraea inaequalis*—I. OLDROYD, 1927:767–768; pl. 108, figs. 5, 6.

Monterey Bay, Calif.

Type material: CAS 063310, holotype; CAS 066066 (1), 067159 (3), SBMNH 34838 (1), paratypes.

Remarks: Synonym of *Astraea gibberosa* (Dillwyn, 1817), according to SMITH & GORDON (1948:200), although they used the unavailable name *A. inaequalis* (Martyn).

nanella, *Marginella jewettii*—T. OLDROYD, 1925:11, 24, 39; pl. 2, fig. 8.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; "plentiful."

Type material: USNM 352361, lectotype (COAN & ROTH, 1966:291), plus 208 paralectotypes, including one in a gelatin capsule that may have been Oldroyd's holotype; USNM 655952 (15), CAS 1198.03 (33), 61823.15 (169), LACMIP 2152–2154 (3), paralectotypes.

Remarks: Synonym of *Cystiscus jewettii* (Carpenter, 1864) according to COAN & ROTH (1966:291). At the time these authors prepared their study, they were sent a lot of 16 specimens that had been in the USNM Recent collection, and it was deemed necessary to select a lectotype from among them. Unknown to Coan and Roth, however, most of the original lot, including an isolated but unlabeled specimen that may have been set aside as the holotype, was in the USNM fossil collections. Oldroyd's figure and the uniform appearance of this species would make recognition of a holotype virtually impossible.

[*nodosus*, *Vermetus*—see under Annelida]

oldroydi, *Coralliophila*—I. OLDROYD, 1929:98–99; pl. 5, figs. 1–4.

Bird Rock, off isthmus, Catalina Id., Los Angeles Co., Calif.; about 1895. Also one specimen from the Galápagos Islands.

Type material: CAS 061746, holotype; CAS 066106 (2), 061747 (1), paratype from Catalina Island; CAS 061748 (1), paratype from the Galápagos.

Remarks: *Latiaxis (Babelomurex) oldroydi* (I. Oldroyd), according to KEEN (1971:546); see also McLEAN (1978:45, fig. 23.4). Mrs. Oldroyd named this species after her husband. The Galápagos paratype is probably *L. (B.) hindsii* Carpenter, 1857 (see KEEN, 1971:545–547; fig. 1068).

parva, Olivella biplicata—T. OLDROYD, 1921b:119; pl. 5, fig. 7. See also I. OLDROYD, 1927:162; pl. 26, figs. 16, 16a.

Punta Abrejos, Baja Calif. Sur; H. Hemphill. Also “upper Pleistocene at San Pedro” [Palos Verdes Sand; late Pleistocene].

Type material: CAS 064314, holotype; CAS 067154 (27), SBMNH 34840 (4), paratypes, from the Recent fauna. CAS 66181.02 (8), paratypes, from the upper Pleistocene at Santa Monica, Los Angeles Co., Calif. CAS 66182.03 (3), paratypes, from the upper Pleistocene at Signal Hill, Long Beach, Los Angeles Co., Calif.

Remarks: Synonym of *Olivella biplicata* (Sowerby, 1825), according to BURCH & BURCH (1959:19–20).

pecora, Turbonilla (Strioturbonilla)—T. OLDROYD, 1925:13, 24–25, 38; pl. 1, fig. 6.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 5 specimens.

Type material: USNM 333506, holotype; USNM 352503 (1), CAS 61823.16 (6), LACMIP 2155–2156 (2), paratypes. Additional material seems to have been added to the type series at a later date.

pedroensis, Acteocina—T. OLDROYD, 1925:9, 23–24, 39; pl. 2, fig. 9.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; “plentiful.”

Type material: USNM 352346, holotype (missing), plus 5 paratypes; CAS 61823.17 (3), CAS 61823.25 (25), paratypes. None of the USNM paratypes matches the measurements of the holotype given by T. Oldroyd.

Remarks: Synonym of *Acteocina culcitella* (Gould, 1853), according to T. M. Gosliner (verbal communication, 24 May 1989).

sanesia, Odostomia (Amaura)—T. OLDROYD, 1925:15, 34–35, 38; pl. 1, fig. 4.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 2 specimens.

Type material: USNM 352531, holotype; CAS 61823.18, paratype.

scelera, Odostomia (Chrysallida)—T. OLDROYD, 1925:14, 30–31, 38; pl. 1, fig. 4.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 9 specimens.

Type material: USNM 352516, holotype; USNM 352517 (2), CAS 61823.19 (3), paratypes.

taylori, Tegula pulligo—I. OLDROYD, 1924b:171–172, 211; pl. 20, figs. 1, 2. See also I. OLDROYD, 1927:781–782; pl. 91, figs. 3, 6 (listed in both accounts as “1922,” but there is no such publication).

Hope Island, N end Vancouver Id., British Columbia; G. W. Taylor.

Type material: CAS 060977, holotype; CAS 060978 (1), 066746 (1), paratypes.

Remarks: Synonym of *Tegula pulligo* (Gmelin, 1791), according to SMITH & GORDON (1948:201).

tersa, Odostomia (Evalea)—T. OLDROYD, 1925:14, 31, 38; pl. 1, fig. 10.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 6 specimens.

Type material: USNM 352518, holotype; USNM 352519 (2), CAS 61823.20 (2), paratypes.

timessa, Odostomia (Amarua)—T. OLDROYD, 1925:15, 35, 39; pl. 2, fig. 4.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 3 specimens.

Type material: USNM 352532, holotype; USNM 353400 (2), CAS 61823.21 (15), LACMIP 2174–2175 (2), paratypes. Because the total number of type specimens is far in excess of the three originally specified, additional material seems to have been added to the type series at a later date.

trochilia, Odostomia (Amaura)—T. OLDROYD, 1925:15 [as *O. “trochila”*; first revision herein]; 34, 39; pl. 2, fig. 1.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene; 2 specimens.

Type material: USNM 352529, holotype; USNM 352530 (1), paratype.

tumida, Tornatina—T. OLDROYD, 1921a:116, 119; pl. 5, fig. 8. See also T. OLDROYD, 1925:9, as *Acteocina tumida*.

Nob Hill Cut, San Pedro, Los Angeles Co., Calif.; San Pedro Sand; middle Pleistocene.

Type material: USNM 353399, holotype.

Remarks: This seems to be a *Retusa*, according to T. M. Gosliner (verbal communication, 24 May 1989).

vancouverensis, Acteon punctocoelata—I. OLDROYD, 1927:25; pl. 1, figs. 19, 20.

[Brandon Island], Departure Bay, Vancouver Id., British Columbia; 5 m.